

Enclosure A to letter from EPA to Westates

Dated 25 September 2003

EPA Comments on Westates' Performance Demonstration Test Plan

Background

This enclosure provides comments on the Performance Demonstration Test Plan which Westates submitted to EPA on May 30, 2003. EPA performed a detailed review of the Test Plan and of the response to comments accompanying the Test Plan. On several dates in September 2003, EPA also discussed some aspects of the Test Plan with Westates and the Colorado River Indian Tribes as noted in several comments.

General Items

COMMENT:

1. In this enclosure, EPA refers to the Performance Demonstration Test as the Comprehensive Performance Test (CPT), to parallel terminology used in 40 CFR 63 Subpart EEE.

RESPONSE:

Since this unit is regulated under RCRA Subpart X, Westates continues to use the term "Performance Demonstration Test" as this more accurately reflects the language used in the regulations which apply to this unit.

COMMENT:

2. Thank you for submitting the CPT Plan in electronic form as well as hard copy. As before, please submit the revised CPT Plan in both hard copy and electronic form (PDF is acceptable).

Also as before, please indicate revisions in the text of the revised CPT Plan using annotations such as strike-out of removed text and red-lining of new text, along with a "clean" copy of the revised CPT Plan. Please also submit a response to comments to accompany the revised CPT Plan, providing detailed rationale and explanations in response to these comments, and indicating what portions of the CPT Plan were revised.

RESPONSE:

Westates is including both electronic (PDF) and hard copies of modifications being made to the test plan with these specific responses.

Comments on Westates' Response to Comments

COMMENT:

3. *Blending and Stockpiling.* EPA agrees that the amount proposed for spiking will suffice to make the feed as homogeneous as possible. EPA also requires that samples be taken during feeding of waste to be analyzed for metals and organics (in accordance with SW-846, 8260 and 8270). The results of the analysis, as agreed, shall be provided in the CPT report.

RESPONSE:

Westates will sample the carbon feed for metals, volatile organics, and semivolatile organics, as indicated

on Tables 5-1 and 5-2 of the Performance Demonstration Test Plan. No changes to the test plan are required.

COMMENT:

4. Response noted. EPA will provide under separate cover our determination of whether we will conduct sampling and analysis of the carbon product.

RESPONSE:

Noted.

COMMENT:

5. *Totally Sealed System.* For the data shown in Table 3, where did you take the fugitive emissions readings and where was background taken? What gas was used for calibration?

RESPONSE:

The fugitive emissions measurements were taken at the sand seals and the doors to the furnace. The background was taken on the equipment structure area. The gas used to calibrate the FID is methane. The concentration is 100 ppm. An air bottle is used to zero the instrument.

COMMENT:

6. Response noted.

RESPONSE:

Noted.

COMMENT:

7. *Startup, Shutdown and Malfunction (SSM) Plan.* EPA agrees that a stand-alone SSM Plan will meet the requirements of 40 CFR 63 Subpart EEE. Please add in the appropriate locations in the CPT Plan (e.g. in Section 3.6) that the SSM Plan is a stand-alone document incorporated by reference. As discussed, please submit the SSM Plan along with the revised CPT Plan.

RESPONSE:

Section 3.6 of the test plan has been revised to refer to the SSM Plan as a stand-alone document, and to incorporate the SSM Plan into the Performance Demonstration Test Plan by reference. The SSM Plan is being submitted with the revisions to the performance Demonstration Test Plan.

COMMENT:

8. *Operating Conditions for Startup, Shutdown and Non-Feed Conditions.* Please specify in Section 3.6 of the CPT Plan that the operating conditions apply as follows:

“Operating conditions specified in Tables 4-2, 7-1 and 7-2 apply any time there is waste in the system, whether or not waste is being fed, except during startup and shutdown.”

RESPONSE:

Section 3.6 of the plan has been modified accordingly.

COMMENT:

9. *Shakedown or Preliminary Testing.* Does Westates plan on spiking during the preliminary testing? If so, please indicate in the appropriate location in the CPT Plan that the feed will be spiked.

RESPONSE:

Westates plans to conduct spiking during the preliminary testing. A statement to this effect has been added to Section 6.1 of the test plan.

Comments on the Comprehensive Performance Test (CPT) Plan

Sections 1 and 2

COMMENT:

10. As requested in EPA's earlier comments, the CPT Plan should not reference the Part B Permit Application as a source of information, as is done in Section 2.1.1 and elsewhere. This is because the Part B Permit Application has not been approved by EPA. The CPT Plan may, however, reference documents that are part of Westates' interim status operating record.

RESPONSE:

References to the RCRA Part B Permit Application have been deleted from Section 2.1.1. There are no other references to the RCRA Part B Permit Application contained in the Performance Demonstration Test Plan.

COMMENT:

11. In Section 1.2, please refer specifically to 40 CFR 63 Subpart EEE when noting "applicable regulatory requirements". In Section 1.4, for clarity, please refer to 40 CFR 63 Subpart EEE instead of the "applicable HWC MACT".

RESPONSE:

This unit is regulated under RCRA Subpart X. The emission limits of 40 CFR 63 Subpart EEE, applicable to existing hazardous waste incinerators, have been identified as appropriate limits for this unit, however not all of the requirements of 40 CFR 63 Subpart EEE necessarily apply. As such, Westates has purposely used broader terms to describe the regulatory requirement for the this facility.

In an attempt to address this comment and to clarify that the emission standards of 40 CFR 63 Subpart EEE are being used for this performance test, Westates has added a citation to the standards for existing hazardous waste incinerators in 40 CFR 63 Subpart EEE to Section 1.4 of the test plan.

Section 3

COMMENT:

12. In Section 3.0, paragraph 3, please define what "periodically" means when used in reference to the frequency of blowdown.

RESPONSE:

Water is purged (or "blown down") to control the buildup of dissolved and suspended solids in the air pollution control system. Typically, the blowdown flow is continuous, but the rate of blowdown varies depending on the nature of the feed materials. At times there may be no blowdown at all.

The test plan as been modified by removing the word “periodically” from the third paragraph of Section 3.0.

COMMENT:

13. EPA is concerned about the discussion of “regulated constituent feed rate” in Section 3.5.1 of the CPT Plan. Who determines whether or not the feed has a “potential” for metals to be present? How is the determination made regarding how much metal is present and what the appropriate feed rate for the metal is? How is “feedstream characterization” determined? When and how is it updated?

RESPONSE:

Westates has prepared a RCRA Waste Analysis Plan. This plan is followed to characterize the feed materials. It also defines the frequency of waste analysis, and how the constituent content is determined. Westates will establish feed rate limits based on the results of the performance testing. These limits define the maximum feed rate for each regulated constituent. A statement has been added to the discussion of regulated constituent feed rate in Section 3.5.1 which refers to the procedures of the RCRA Waste Analysis Plan.

COMMENT:

14. To clarify the discussion of Automatic Waste Feed Cut Offs (AWFCOs) in Section 3.5.3, please change the phrase “non-regulatory AWFCOs” to “administrative stop feeds” or “safety stop feeds.” The “administrative stop feeds” or “safety stop feeds” would refer to the control parameters listed in Group B and Group C in Table 7.1.

RESPONSE:

Section 3.5.3 of the test plan has been modified to refer to non-regulatory AWFCOs as “administrative stop feeds” or “safety stop feeds”. It should be noted however, that these do not refer to the Group B and C parameters in Table 7.1 All of the parameters in Table 7.1 are regulatory limits. The Group B and C parameters do not necessarily result in a feed stoppage. Items which are considered as administrative stop feeds or safety stop feeds are not within the scope of the test plan. These items include such things as low natural gas pressure resulting in a stoppage of waste feeds since auxiliary fuel is not available for maintaining system temperature if it is needed.

COMMENT:

15. During the CPT, Westates is subject to regulations regarding operating conditions, automatic waste feed cut-offs (AWFCOs), and emergency shutdowns in 40 CFR 63 Subpart EEE. As discussed, any AWFCO which occurs during the CPT, but which is not noted in Table 3.3 and Section 3.5.3, will be considered an exceedance of emission standards or operating requirements and will be counted toward the maximum number of such exceedances allowed per 40 CFR 1206(c)(2)(v)(A). As there are many more ways a malfunction can occur than are noted in Table 3-3 and Section 3.5.3, we recommend that the SSM Plan include a wider variety of possible malfunction and emergency shutdown scenarios.

For example, since the residence time in the hearth is 42 minutes, it is conceivable that a “stop feed” or AWFCO could happen in which an air Pollution Control Device (APCD) is the part that is malfunctioning. In this case, processing the feed that is already in the system could cause emissions from the stack that exceed emissions limits, even though the feed has stopped.

RESPONSE:

Westates understands the concept of potential exceedances as defined in 40 CFR 63 Subpart EEE. The SSMP will define potential malfunctions and will be followed during the performance test periods just as in normal operation. Table 3-3 of the test plan only lists regulatory limits which result in an automatic waste feed cutoff. It does not address malfunctions, and is not intended to address malfunctions. This is the purpose of the SSMP.

COMMENT:

16. Section 3.6.3 says the residence time is 42 minutes. The table in Attachment E says the residence time in the hearths is 48 minutes. Please correct this discrepancy.

RESPONSE:

The residence time is 42 minutes. The table in Attachment E has been corrected.

Section 4

COMMENT:

17. Please specify if the operating conditions provided in Table 4-2 are maximums or minimums, using the same format as Table 7-1. For example, maximum activated carbon feed rate would be specified at 3,000 lb/hr with no need to specify the minimum. Please also include a table showing operating conditions which will result in administrative stop feeds. Test observers need to have information on all conditions which will cause a stop feed.

RESPONSE:

The operating conditions shown in Table 4-2 are targets for the test periods; they are not minimums or maximums. The only limits which will result in an AWFCO are listed in Table 7-2 for the testing periods. Safety stop feeds are always in place, but are beyond the scope of the performance test plan. There are no set values or set parameters for an administrative stop feed. Any decision to stop feed voluntarily, even though a regulatory limit or a safety limit has not been exceeded, would be considered as an administrative stop feed, and will be made on a case-by-case basis by process operations personnel.

COMMENT:

18. EPA reiterates that a carcinogenic metal spike should not be used. As discussed, please change the text in Sections 4.4.5 and 7.2.5 to indicate the use of nitrate forms of the spikes for lead and chromium.

RESPONSE:

Lead nitrate and Chromium (III) nitrate will be used for spiking. Sections 4.4.5 and 7.2.5 of the test plan has been modified accordingly.

Section 5

COMMENT:

19. Please indicate how the sampling trains listed in Table 5-1 will be arranged on the stack. For example, indicate on the stack elevation and the test port layouts in Drawings D95-75-S1-1 and D95-75-S2-1 (in Attachment E) which ports will be used for which sampling trains, and provide corresponding information in Table 5-1. Please also indicate which trains will be combined (e.g. metals, particulates, HCl).

RESPONSE:

One purpose of the preliminary testing is to work through the logistics of setting up and operating the multiple sampling trains to be used during this testing program. Westates will inform EPA of the planned location for each sampling train following completion of the preliminary testing.

Table 5-1 and the text of Section 5.1 clearly indicate what analytes are being sampled with each train. To re-iterate here, those trains are as follows:

Sampling Train	Analytes
EPA Method 26A	Particulate matter, hydrogen chloride, chlorine
EPA Method 29	Multiple metals
SW-846 Method 0010-SV	Semivolatile organics, organochlorine pesticides
SW-846 Method 0010-P	PAHs, PCBs
SW-846 Method 0010-TOE	TCO, GRAV
SW-846 Method 0023A	PCDD/PCDF
SW-846 Method 0061	Hexavalent chromium
SW-846 Method 0030	Volatile organics
SW-846 Method 0040	Total volatile organics (C ₁ – C ₇ alkanes)
PSD (EPA Method 5)	Particle size distribution

Please note that based on experience of Westates' contractors, the test plan has been modified to collect particle size distribution samples using an EPA Method 5 sampling train with a smooth filter, followed by analysis using a scanning electron microscope, rather than using a cascade impactor, as originally planned.

COMMENT:

20. Section 5.1.4.9 indicates that particle size distribution data will be collected during the CPT, and the sampling and analysis methods to be used are found in Table A-15 in Attachment A. However, Section 5.1.4.9 and Section 9 also discuss data in lieu of testing for particle size distribution, and additional information is provided in Attachment G. As discussed, there is not sufficient information in the CPT Plan for EPA to determine whether the data in lieu of testing will be acceptable. Please confirm in the CPT Plan whether you intend to collect particle size distribution data during the CPT.

Please note that if you would like us to consider data in lieu of testing for particle size distribution, you must show that the data you are providing was collected under the same operating conditions at which the CPT is to be performed. Otherwise the data would not be representative of what you would see during the CPT.

RESPONSE:

Westates will collect particle size distribution data during the performance test. Reference to data in lieu of testing for particle size distribution has been removed.

Please note that based on experience of Westates' contractors, the test plan has been modified to collect particle size distribution samples using an EPA Method 5 sampling train with a smooth filter, followed by analysis using a scanning electron microscope, rather than using a cascade impactor, as originally planned.

COMMENT:

21. Please provide in Section 5.3 of the CPT plan more detail about the calibration schedule for CEMS during the CPT. Please also indicate in the CPT Plan that during the in-briefing before the CPT, Westates will provide to test observers the most recent calibration data for all equipment and instrumentation that requires periodic calibration.

RESPONSE:

Westates will conduct a complete CEMS performance specification test prior to the beginning of the performance demonstration test. The CEMS will only undergo their automated daily calibration checks during the performance test.

The most recent calibration data for the instruments listed in Table 3-1 will be available to the regulatory observers upon their arrival at the site for the performance test.

Section 6

COMMENT:

22. As discussed, EPA requests that Westates provide EPA staff access to the operating parameter data collected during the preliminary test, noted in Section 6.5 and Table 7-1. EPA staff will be interested in visiting Westates to view the data after the preliminary test is completed so we can familiarize ourselves with the operating conditions that are to be expected during the CPT.

Please also indicate in Section 6.5 and Section 7 that Westates will inform EPA in writing if there are proposed changes to operating conditions for the CPT, based on information collected during the preliminary test.

RESPONSE:

Westates acknowledges EPA's request for access to the preliminary test operating data.

Sections 6.5 and 7 of the test plan have been modified to indicate that Westates will inform EPA in writing if there are proposed changes to operating conditions for the CPT, based on information collected during the preliminary testing.

COMMENT:

23. Please indicate in Section 6.5 which sampling trains will be used during the preliminary test. Please note in Section 6.5 that if any of the emissions standards are exceeded during preliminary testing, Westates will notify EPA.

RESPONSE:

Westates has not yet determined exactly which sampling trains will be used during the preliminary testing. As stated in the test plan, the preliminary testing will be a subset of the formal performance demonstration test. As such, any or all of the sampling trains may be used.

A statement has been added to Section 6.5 indicating that Westates will notify EPA if any of the currently applicable emission standards under RCRA interim status are exceeded during the preliminary testing.

Section 7

COMMENT:

24. In Section 7.1, please refer specifically to 40 CFR 63 Subpart EEE when noting “established regulatory requirements”.

RESPONSE:

This unit is regulated under RCRA Subpart X. The emission limits of 40 CFR 63 Subpart EEE, applicable to existing hazardous waste incinerators, have been identified as appropriate limits for this unit, however not all of the requirements of 40 CFR 63 Subpart EEE necessarily apply. As such, West's has purposely used broader terms to describe the regulatory requirement for the this facility.

COMMENT:

25. Please specify in Section 7 and Table 7-1 the minimum and maximum furnace temperatures within which you propose to operate during the CPT.

RESPONSE:

Table 7-2 presents the minimum afterburner temperature limit setpoint for the testing periods. There is no maximum regulatory temperature interlock, however a safety interlock is set at 2400°F. Table 4-2 shows the target afterburner temperature range for the test. It is important to note that the only temperature objective during the performance test is to establish a minimum afterburner temperature limit.

The reactivation furnace is operated at various temperatures in order to process the spent activated carbon and to properly reactivate it to make Westates products. Typical hearth operating temperature ranges (°F) are shown below for informational purposes:

Hearth 1 – 600 – 1000
Hearth 2 – 600 – 1200
Hearth 3 – 900 – 1500
Hearth 4 – 1100 – 1600
Hearth 5 – 1100 – 1700

COMMENT:

26. A maximum feed rate of 3,000 lb/hr is proposed in Table 7.1 as the anticipated permit limit, and a maximum feed rate of 3,300 lb/hr is proposed in Table 7.2 as the maximum spent carbon feed rate during the CPT. A maximum interim status feed rate of 2,760 lb/hr is established in Westates' current Part A permit application, dated October 1996. Westates' Part B permit application of November 1995 proposed an expansion of the feed rate to 4,140 lb/hr. However, in Westates' letter to EPA dated 25 August 2000, Westates stated that they will resubmit a Part B permit application which will reflect the deletion of the increased feed capacity request. Please clarify in the CPT Plan whether Westates is proposing an expansion of the feed rate from 2,760 lb/hr to 3,000 lb/hr (or 3,300 lb/hr) under permit conditions.

RESPONSE:

Westates is not proposing an increase of the throughput capacity above 2,760 lb/hr. Westates wishes to establish a limit of 2,760 lb/hr and demonstrate this during the performance test. In order to ensure that a limit of 2,760 lb/hr is achieved, the target feed rate of 3,000 lb/hr has been established. Further, in order to actually achieve a feed rate average of 2,760 to 3,000 lb/hr it is necessary to set the AWFCO interlock setpoint somewhat higher, thus the interlock setpoint of 3,300 lb/hr was suggested for the test periods.

In summary, Westates wishes to set a permit limit of 2,760 lb/hr of spent activated carbon feed. If the performance test demonstrates a feed rate of 2,760 lb/hr or slightly higher, Westates will only request a

feed rate limit of 2,760 lb/hr.

COMMENT:

27. For the preliminary test and the CPT, for all operating conditions noted in Sections 7.2.1, 7.2.2, and 7.2.3 that have rolling averages, please provide the instantaneous 1-minute averages as well as the rolling averages.

RESPONSE:

1-minute average and rolling average data will be provided in the test report for all operating parameters which will have rolling average limits established. Section 8.4 of the performance test plan has been modified to indicate that this data will be provided.

COMMENT:

28. Regarding the discussion in Section 7.2.3.1 and information provided in Attachment F, if Westates wishes to use a chlorine vs total dissolved solids (TDS) correlation to demonstrate compliance with the chlorine feed rate limit, data must be collected during the CPT to show there is a correlation. How often will TDS be monitored during the CPT? Does Westates monitor for TDS during normal operating conditions? Also, please clarify what the word "delta" means in paragraph 3 of Section 7.2.3.1.

RESPONSE:

TDS is measured continuously in accordance with the facility's water discharge permit with the POTW. "Delta" means difference. In this instance, "delta" refers to the difference between the TDS of the incoming water and the effluent water. During the performance test, data will be collected to demonstrate the correlation between TDS and chlorine feed rate.

COMMENT:

29. For Group C parameters noted in Section 7.2.4, please provide the manufacturer's recommended operating conditions as well as or in lieu of the "past operating experience." Test observers will need this information in order to prepare for the CPT.

RESPONSE:

Since the system has been operating for a number of years, WCAI believes that the facility's operating experience is a better gauge of what is an appropriate operating point than the equipment manufacturer's recommendations, which are now several years old. Typically, for new equipment, the manufacturer's recommendations represent the best data as a starting point for determining appropriate operating setpoints, however as the facility operators gain experience with the equipment, they usually have a better understanding of how the equipment actually operates under real-world conditions. Further, WCAI has modified or replaced several components since its original installation, thus the original specifications are no longer applicable in some cases. For example, the scrubber packing has been replaced with a different type than was originally supplied. This packing allows the scrubber to operate efficiently with a lower pressure differential than with the original packing. Thus the scrubber manufacturer's specifications are no longer meaningful.

WCAI has recommended Group C operating parameters based on its best knowledge of how the facility actually operates. If the performance test observers wish to see specific component specifications, those will be made available to them at the facility.

Section 8

COMMENT:

30. Please include in the table in Section 8.4 the volumetric air flow rate at the furnace inlet and at the furnace outlet. Alternatively, you may provide the pressure drop across the furnace as a differential. If you cannot provide this information, please describe in detail why.

Also, we understand that there are thermocouples in each of the hearths in the furnace. Please include the hearth temperatures in the table in Section 8.4.

RESPONSE:

No measurement of gas flow rate is made within the furnace. This is because of the extreme conditions present, which do not allow for the reliable installation or operation of a flow monitoring instrument. Westates can approximate the combustion gas flow rate through the afterburner using an energy balance concept and the measured stack gas flow information. A paper describing the technique for estimating combustion gas flow rate based on stack gas information is attached to these responses.

Westates will provide the hearth temperatures during the performance test, for information purposes. These data points have been listed in Section 8.4 of the test plan.

Section 9

COMMENT:

31. Please see comment #20 for comments relevant to Section 9.

RESPONSE:

Please see the response to Comment #20.

Attachments

COMMENT:

32. Please see comment #28 for comments relevant to Attachment F.

RESPONSE:

Please see the response to Comment #28.

COMMENT:

33. Please see comment #20 for comments relevant to Attachment G.

RESPONSE:

Please see the response to Comment #20.